

WHAT IS CLAIMED IS:

1. A method of handling data packets in a series of network switches, said method comprising the steps of:

receiving an incoming data packet at a data port of a first switch of said series of network switches;

5 resolving a stack tag from a header of said incoming data packet;

determining whether an incoming data packet is a unicast packet, a multicast packet or an IP multicast packet; and to search the address resolution lookup and layer three IP lookup tables to find an egress port for said incoming data packet;

modifying the header of said incoming packet;

10 forwarding said incoming data packet to at least a second switch of said series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress port; and

remodifying the header of said incoming packet when the egress port is one of a series of data ports of a particular switch of said series of switches.

15 2. A method of handling data packets as recited in claim 1, wherein said step of modifying the header of said incoming packet comprises adding or removing a stack tag to or from said header to be evaluated by said particular switch.

3. A method of handling data packets as recited in claim 1, further comprising the steps of:

resolving a mirroring field of said incoming data packet;

forwarding said incoming data packet to a mirroring port based on said mirroring

5 field.

4. A network switch for network communications, said network switch comprising:

a first data port interface, said first data port interface supporting at least one data port transmitting and receiving data at a first data rate;

5 a second data port interface, said second data port interface supporting at least one data port transmitting and receiving data at a second data rate, different from the first data rate;

a memory communicating with said first data port interface and said second data port interface;

10 a memory management unit, said memory management unit for communicating data from said first data port interface and said second data port interface and said memory; and

a communication channel, with the communication channel communicating data and messaging information between said first data port interface, said second data port interface, and said memory management unit,

15 wherein said first data port interface is configured to communicate with a second switch at said first data rate and said second data port interface is configured to communicate with a third switch at said second data rate and said switch is configured to resolve a stack tag from a header of an incoming data packet and forwards the incoming data packet to one of said second and third switches based on the resolved stack tag.

5. A network switch as recited in claim 4, wherein said switch is configured to modify said header of said incoming data packet before forwarding the incoming data packet to another switch.

6. A network switch in a series of network switches comprising:

means for receiving an incoming data packet at a data port of a first switch of said series of network switches;

means for resolving a stack tag from a header of said incoming data packet;

5 means for determining whether an incoming data packet is a unicast packet, a multicast packet or an IP multicast packet; and to search the address resolution lookup and layer three IP lookup tables to find an egress port for said incoming data packet;

means for forwarding said incoming data packet to at least a second switch of said series of network switches, on a stacked connection operating at a first data rate,
10 based on the stack tag and the egress port; and

means for modifying the header of said incoming packet when the egress port is one of a series of data ports of a particular switch of said series of switches.

7 A network switch in a series of network switches as recited in claim 6, wherein said means for modifying the header of said incoming packet comprises means for adding or removing a stack tag to or from said header to be evaluated by said particular switch.

8. A network switch in a series of network switches as recited in claim 6, further comprising:

means for resolving a mirroring field of said incoming data packet;
means for forwarding said incoming data packet to a mirroring port based on said
mirroring field.